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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,887	10/29/2003	Leszek Cieplinski	1906-0129P	4115

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EXAMINER	
BITAR, NANCY	
ART UNIT	**PAPER NUMBER**
2624	

NOTIFICATION DATE	DELIVERY MODE
11/20/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/694,887	CIEPLINSKI ET AL.	
	Examiner	Art Unit	
	Nancy Bitar	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11 and 13-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11 and 13-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/16/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments 09/07/2007 have been fully considered but they are not persuasive.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/07/2007 has been entered.

3. Applicant has cancelled claim 10. Claims 1-9 and 11, 13-15 are pending.

a. Rejection Under 35 U.S.C. ∋102

As to Deficiencies of Hori- Independent Claim 1, on page 9, applicant argues that *Hori fails to teach an object appearing in a sequence of images wherein an error value is bases on the change in are of the object as represented by the representative point and the area of the object with the representative point replaced by the respective approximate function value.* However, reference teaches a method of setting the area of the approximate figure to the value obtained by multiplying the area of the object region by a constant. Moreover, to make the determination to change the reference object region to an object region depends on the error between the actual object region and the predicted object

region, a ratio of the area of a common portion to both regions to the area of a part which is not common can be used [0335]. Applicant argues that reference teaches the error values look at the maximum difference for a particular vertex between the approximate function trajectory and the actual trajectory where each vertex is treated separately with a respective or approximate function and error value. Examiner disagree with applicant because the difference between the area of the object region is taken through the actual X and Y component of the location and the function approximation is derived for each representative point in order to relocate to the position indicated by approximate function. Applicant argues that the *present invention look at the difference between the area of the object region with a representative point*. Hori clearly teaches in column 9, lines 38-45 that the DIFFERENCE IN AREA between the object region and the approximate polygon may lay within a reference. Examiner still maintains his position.

Applicants argues that he did not find anywhere in Hori et al where Hori mentions, "setting the area .....a value obtained by multiplying the area of the object region by a constant". Examiner points out to column 9 paragraph [0029] lines 47-52 in Hori et al reference.

Applicant argues that Hori et al provides no disclosure in terms of algorithm of how the ratio it proposes is actually calculated. Hori et al teaches a ratio of the area of common and non-common portions representing change of area which is according to a temporal function in that case by all means, the error between the actual object region and the predicted object region, a ratio of the

area of a common portion to both regions to the area of a part which is not common can be used. Therefore, the area of the object with vertex A and the vertex A' can both be used to determine the area. Additionally the applicant's argument that the combination of all the features recited in claims 1-9,11-15 makes the applicant's invention patentable different is not found persuasive and thus Hori still reads on the applicant's claimed invention.

All remaining arguments are reliant on the aforementioned and addressed arguments and thus are considered to be wholly addressed herein.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-9 and 11,13 -15, are rejected under 35 U.S.C. 102(b) as being anticipated by Hori et al (EP 1 154 379 A2)

As to claim 1, Hori et al. discloses a method of representing motion of an object appearing in a sequence of images comprising deriving for each image a set of representative points (extracting a plurality of points representing the figure for each of the frames, see column 3, lines 41-42) representing the location of the object (data indicating positions of the plurality of points, see column 3,lines 45-46),

deriving an approximate function representing the trajectory of a representative point in two or more of said sequence of images (the representative point trajectory function approximating device 104 approximates a time series of the positions of the representative points extracted at the figure representative point extracting device 103,see column 10, lines 33-37),

and calculating an error value for said approximate function for the representative point for an image (describing the object region data using the functions, see column 3, lines 47-48, In Step S603, an approximation error $e_{(j)}$ (j=0,1,……,M-1)of the approximate function is calculated, see column 15,lines 17-21, note that the approximation device 102 outputs information about the approximate figure for one frame, see column 10,lines 27-29)), wherein that the error value is based on the change in area of the object as represented by the representative point and the area of the object with the representative point replaced by the respective approximate function value

(($e_{(j)} = \max | v_{(j)\,th} - F_{(j)\,tk,\,ti}(th) |$,see column 15 line 21,note that the method creates an initial approximation polygon for the object region and then decreasing the number of vertexes of the approximate polygon so that the difference in area between the object region and the approximate polygon may lie within a reference, see column 9,lines 38-45).

As to claim 2, Hori et al. teaches a method as claimed in claim 1 wherein the error value is based on the change in area in an image (step S603, figure 7, ($e_{(j)} = \max | v_{(j)\,th} - F_{(j)\,tk,\,ti}(th) |$,see column 15 line 21,note that change of region is denoted as change of area and note that the approximate function $v_{(j)t}$ found over

the section ranging from t_a to t_b is denoted by $F_{(j)\,ta,\,tb}(t)$ (j = 0, 1, ..., M-1), the starting point $v_{(j)K}$ is denoted by $F_{(j)\,tk,\,ti}(tk)$,and the ending point $v_{(j)i}$ is denoted by $F_{(j)\,tk,\,ti}(tj)$, see column 15 lines 12-16).

As to claim 3, Hori et al. teaches a method as claimed in claim 1 wherein the error

value is based on the change in area in a plurality of images (step S603,figure 7, $(e_{(j)} = \max | v_{(j)\,th} - F_{(j)\,tk,\,ti}(th) |$,see column 15 line 21,note that change of region is denoted as change of area and note that the approximate function $v_{(j)t}$ found over the section ranging from t_a to t_b is denoted by $F_{(j)\,ta,\,tb}(t)$ (j = 0, 1, ..., M-1), the starting point $v_{(j)K}$ is denoted by $F_{(j)\,tk,\,ti}(tk)$,and the ending point $v_{(j)i}$ is denoted by $F_{(j)\,tk,\,ti}(tj)$, see column 15 lines 12-16).

As to claim 4, Hori et al. teaches a method as claimed in claim 1 wherein a function approximation is derived for each co-ordinate of a representative point (each representative point is represented by the horizontal coordinate axis X and the vertical coordinate axis Y, see column 10, lines 30-32)

As to claim 5, Hori et al. teaches a method as claimed in claim 1 wherein a function approximation is derived for each representative point (step S4,figure 2,note that this function is expressed for each representative point and differs in expression, see column 10,lines 41-43)

As to claim 6, Hori et al. teaches a method as claimed in claim 1 wherein a function approximation is done for representative points independently (a straight line or a spline curve may be used as a function representing a representative point trajectory, see column 10, lines 50-52).

As to claim 7, Hori et al. teaches in figure 5 a method as claimed in claim 1 wherein a function approximation is done for two or more vertices in conjunction (the vector from vertex V0 to V1 is denoted by V0,1 and vector $V_{1,2}$,$V_{2,3}$,.....,$V_{M-2,M-1}$ are determined, see column 14, lines 19-20,note that the function approximation device 104 calculates an approximation function 503 that expresses the values of the X-component and Y-component of each vector, see column 14, lines 28-31).

As to claim 8,Hori et al teaches a method as claimed in claim 1 wherein the error value for an image is based on a function of the number of pixels (generating and storing a bit map on which"1" corresponds to the interior of each object, see column 45, lines 53-55) that are in the modified object outline (manually inputting the contour, object regions may be obtained automatically by executing an image processing, see column 45 lines 48-49) replacing a representative point by the function approximation value of the representative point but not the original outline and the number of pixels that are in the original outline but not in the modified outline (fitting an inputted contour to the contour line of the object in an image by means of a technique using a dynamic outline model referred to as Snakes, the interior of the contour thus fitted may be set as an object regions, see column 45, lines 41-44) .

As to claim 9, Hori et al teaches in figure 8 a method of identifying selection of an object in an image in a sequence of images, wherein the object motion has a representation derived using a method as claimed in claim 1(as rejected in claim 1 above), the method comprising identifying a selected region of

the image (700), determining the location of said object in said image using said motion descriptor (704,note that the representative point trajectory 704 describes the trajectory of a representative point, see column 16, lines 42-43),note that minimum rectangle or polygon as encloses the whole of each object trajectory is compared with the inputted coordinate and only objects included in the smallest rectangle or polygon which encloses the whole trajectory are extracted (the number of extracted objects may be 0, 1, or more), see column 30, lines 43-48)

As to claim 11 differ from claim 1 only in that claim 1 is a method claim whereas; claim 11 is an apparatus claim. Thus, claim 11 is analyzed as previously discussed with respect to claim 1 above.

As to claim 13 and 14 differ from claim 1 only in that claim 1 is a method claim whereas, claim 13 and 14 is an apparatus claim. Thus, claim 13and 14 are analyzed as previously discussed with respect to claim 1 above.

As to claim 15, Hori et al. in figure 8 a descriptor of motion (related information is attached to the object region data, column 20, lines 56-58) of an object in a sequence of images derived by a method according to claim 1 (database including related information about individual objects exists independently from the object region data, see column 20, lines 56-58). Note, applicant discloses in the specs [0028] that a descriptor database 10 storing descriptors of objects or parts of objects appearing in images stored in the image database 8).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nancy Bitar whose telephone number is 571-

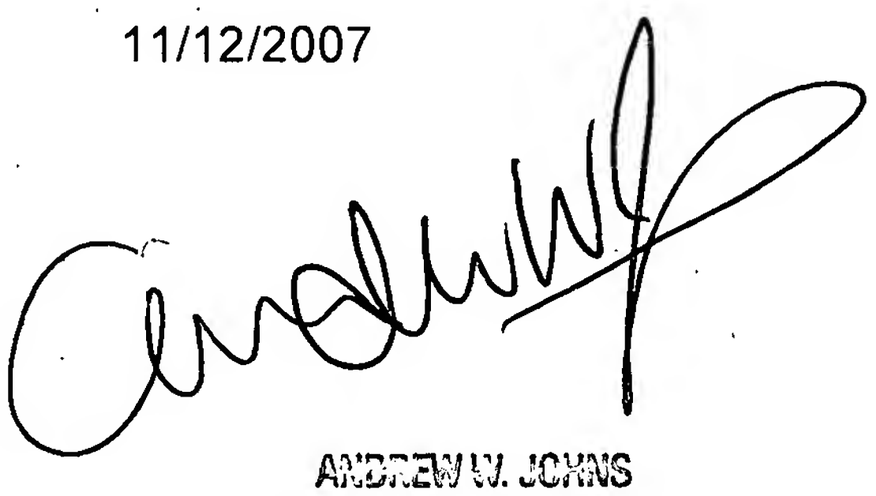
270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nancy Bitar

11/12/2007



ANDREW W. JOHNS
PRIMARY EXAMINER